HAND-BOOK

OF

ANATOMY FOR ARTISTS

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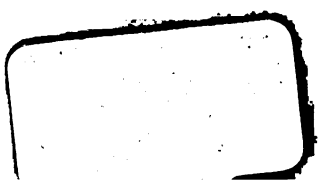

HAND-BOOK OF ANATOMY

FOR

STUDENTS OF THE FINE ARTS.

WITH ILLUSTRATIONS ON WOOD.

BY

J. A. WHEELER.

A New Edition.

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PREFACE.

THIS little Work has been published with the view of supplying what seemed to the Compiler to be much wanted by Students of Art, viz., an Illustrated Pocket Hand-Book of the Bones and principal Muscles of the Human Figure, arranged in a way suitable for the most easy reference, and thus to be particularly convenient for them while actually engaged in Drawing.

A Work so simple in its pretensions cannot be supposed to interfere with larger and more complete works, but is rather intended as an Introduction, and to be found useful where the necessary size of any, so complete, would render them cumbersome. But, to perfect his understanding of the Muscles and their uses, a Student should be anxious to possess himself of a Work with enlarged and more varied Illustrations; and by far the most complete, in this respect, is the folio of "Anatomical Studies," from Drawings by the late John Flaxman, the descriptions of which are generally adopted here. The present publication, however, will prove useful as a companion, on account of its portability and convenient method of arrangement.

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DESCRIPTIONS OF THE MUSCLES.

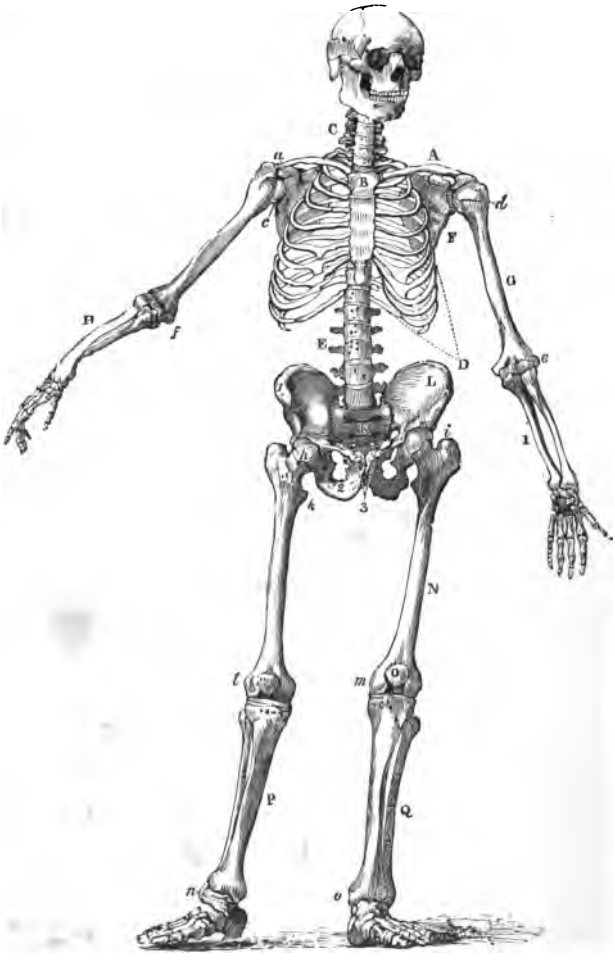


PLATE I.—BONES OF THE FRONT SKELETON.

PLATE I.

BONES OF THE FRONT SKELETON.

Clavicle, or Collar-bone.
Sternum, or Breast-bone.
The seven Cervical Vertebræ.
The five False Ribs; the seven upper ones being called True.
The five Lumbar Vertebræ.
Scapula, or Shoulder-blade.
Coracoid Process of the Scapula.
Humerus, or Arm-bone.
Head of the Humerus.
A Sulcus, or Furrow, through which one of the heads of the Biceps passes.
Outer Condyle of the Humerus, from which arise the Muscles that *extend* the Wrist and Fingers.
Inner Condyle: here arise the Muscles which *bend* the Wrist and Fingers.

H Radius } Bones of the Fore-
I Ulna } arm.

K Os Sacrum.
L Os Innominatum.
1 The Ilium.
2 Os Ischium.
3 Os Pubis.
N Femur, or Thigh-bone.
h Head of the Femur.
i Great Trochanter.
k Lesser Trochanter.
l Outer Condyle of the Femur.
m Inner Condyle of the Femur.
O Patella, or Knee-pan.
P Tibia; largest bone of the Leg.
Q Fibula.
n External Ankle.
o Internal Ankle.

PLATE II.

BONES OF THE BACK SKELETON.

A Clavicle, or Collar-bone.
C The seven Cervical Vertebræ.
D The twelve Dorsal Vertebræ.
E The five Lumbar Vertebræ.
F Scapula, or Shoulder-blade.
b Acromion of the Scapula.
c Spine of the Scapula.
G Humerus.
H Radius } Bones of the Fore-
I Ulna } arm.
K Os Sacrum.
k Os Coccygis.
L Os Ilium.
M Os Ischium.
N Femur, or Thigh-bone.
P Tibia; largest bone of the Leg.
Q Fibula.

PLATE II.—BONES OF THE BACK SKELETON.

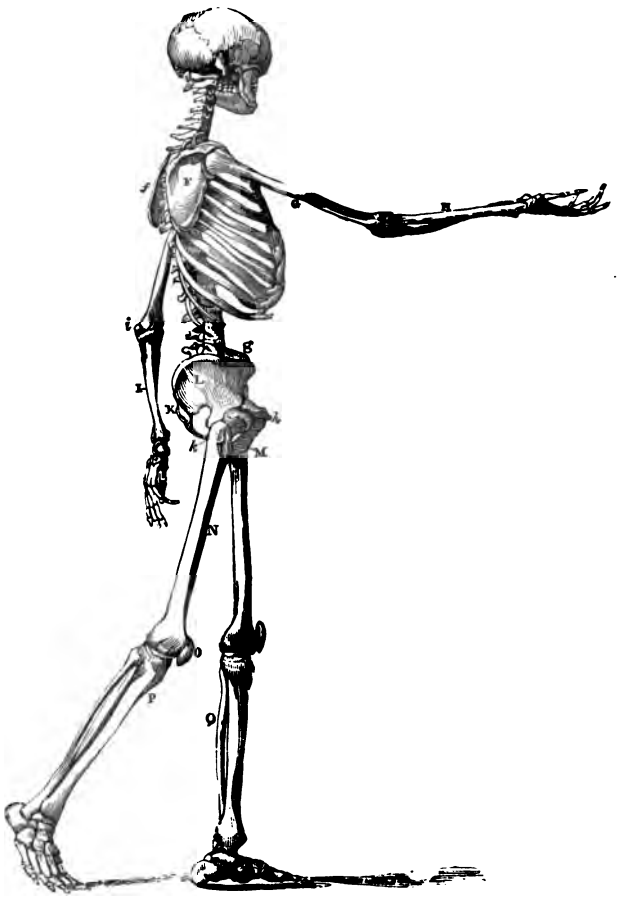


PLATE III.—BONES OF THE SIDE SKELETON

PLATE III.

BONES OF THE SIDE SKELETON.

F Scapula, or Shoulder-blade.
f Base of the Scapula.
G Humerus.
H Radius } Bones of the Fore-
I Ulna } arm.
i Olecranon.
K Os Sacrum.
k Os Coccygis.
L Os Ilium.
g Spine of the Ilium.
h Os Pubis.
M Os Ischium.
N Femur, or Thigh-bone.
O Patella, or Knee-pan.
P Tibia : largest bone of the Leg.
Q Fibula.

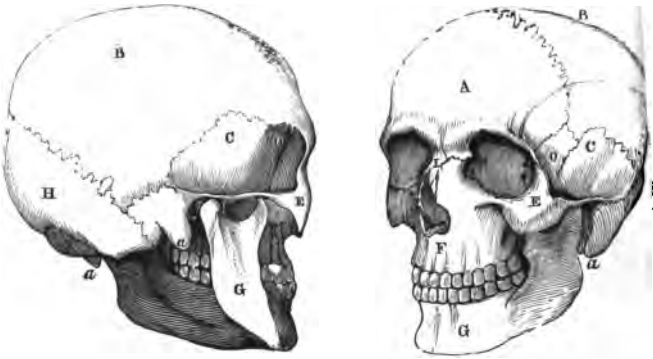


PLATE IV.—BONES OF THE HEAD.

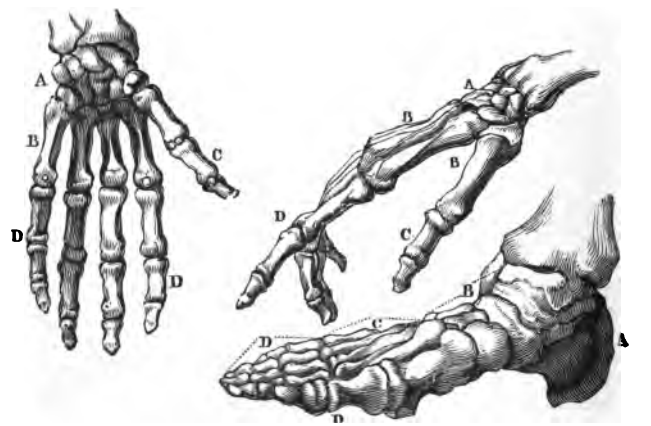


PLATE V.—BONES OF THE HAND AND FOOT

PLATE IV.

BONES OF THE HEAD.

A Os Frontis, or Forehead-bone.
BB Ossa Parietalis or Bregmatis.
CC Os Temporum.
DD Os Sphænoideum.
a a The Mastoid Process.
EE Os Jugale, or Os Malare.
FF Maxilla Superior, or Upper Jaw.
GG Maxilla Inferior, or Lower Jaw.
H Os Occipitis, or Back of Head.
I Os Nasi.

PLATE V.

BONES OF THE HAND.

A Bones of the Carpus, or Wrist.
B Bones of the Metacarpus, or Hand.
C Bones of the Thumb.
D Bones of the Fingers.

BONES OF THE FOOT.

A Os Calcis, or Heel-bone.
B Tarsus, or Instep, composed of six bones besides the Os Calcis.
C Bones of the Metatarsus, or Foot.
D Bones of the Toes.

Of the bones of the Tarsus, immediately joining the Metatarsus, the first three, from the inner side of the foot, are called the CUNEIFORM Bones; and the small outer one, the Os CUBOIDES.

The next bone of the Tarsus is called the Os SCAPHOIDES, or Os NAVICULARE. Between it and the Os Calcis is the Astragalus, which supports the two bones of the leg.

PLATE VI.—MUSCLES OF THE FRONT FIGURE.

PLATE VI.

MUSCLES OF THE FRONT FIGURE.

A Platysma Myoides.
a Sterno-hyoideus.
b Mastoideus.
B Deltoides.
C Biceps Brachii.
D Pronator Radii Teres.
E Supinator Radii Longus.
F Flexor Carpi Radialis.
G Palmaris Longus.
H Flexor Carpi Ulnaris.
I Pectoralis Major.
K Obliquus Descendens.
LL Rectus.
L Linea Semilunaris.
M Linea Alba.
N Poupart's, or Fallopius's Ligament.
OO Sartorius.
P Tensor Vaginæ Femoris.
Q Gracilis.
R Iliacus Internus.
S Pectinalis.
T Triceps Abductor Femoris.
U Psoas Magnus.
V Vastus Externus.
W Rectus Femoris.
X Vastus Internus.
Y Gastrocnemius.
y Soleus.
Z Tibialis Anticus.

The situation of some muscles will be found indicated in these plates, which are not of sufficient importance to need further notice.

DESCRIPTION OF THE MUSCLES OF THE FRONT FIGURE.

1. A PLATYSMA MYOIDES—*Arises* from the cellular covering of the upper part of the deltoid and pectoral muscles; and runs obliquely upwards, along the side of the neck. *Inserted* into the lower jaw between its angle and the origin of the depressor anguli oris. *Use*—To assist the depressor anguli oris; and also draws up, when the mouth is shut, the skin to which it is connected below the the lower jaw.
2. B DELTOIDES—*Arises* from the outer part of the clavicle, from the spine and acromion of the scapula. It is composed of several lobes or parcels of flesh, which all join in one tendon, and are *Inserted* into the outside of the humerus, four fingers' breadth below its head. *Use*—To raise the arm, and assist it in every motion, except that of depressing it.
3. C BICEPS—*Arises* by two heads, one of which proceeds from the upper edge of the scapula; they both unite about the middle of the arm and make one belly, which is *Inserted* by a strong round tendon into the tuberosity at the upper end of the radius. *Use*—To bend the fore-arm.
4. I PECTORALIS—*Arises* from part of the clavicle, from the sternum, and from the six upper ribs, and is *Inserted*, by a strong tendon, into the humerus, four fingers' breadth below its head. *Use*—Moves the arm forwards, and upwards towards the sternum.
5. K OBLIQUUS DESCENDENS—*Arises* from the two last true and the first five false ribs, by five or six digitations; the four uppermost of which lie between the teeth of the serratus major anticus: it descends obliquely, by a broad and very thin tendon, and, passing over the rectus, is *Inserted* all

along the linea alba, to the upper and fore part of the spine of the ilium, and to the fore part of the os pubis. *Use*—Assists in expiration, and, occasionally, in discharging the contents of the stomach and belly.

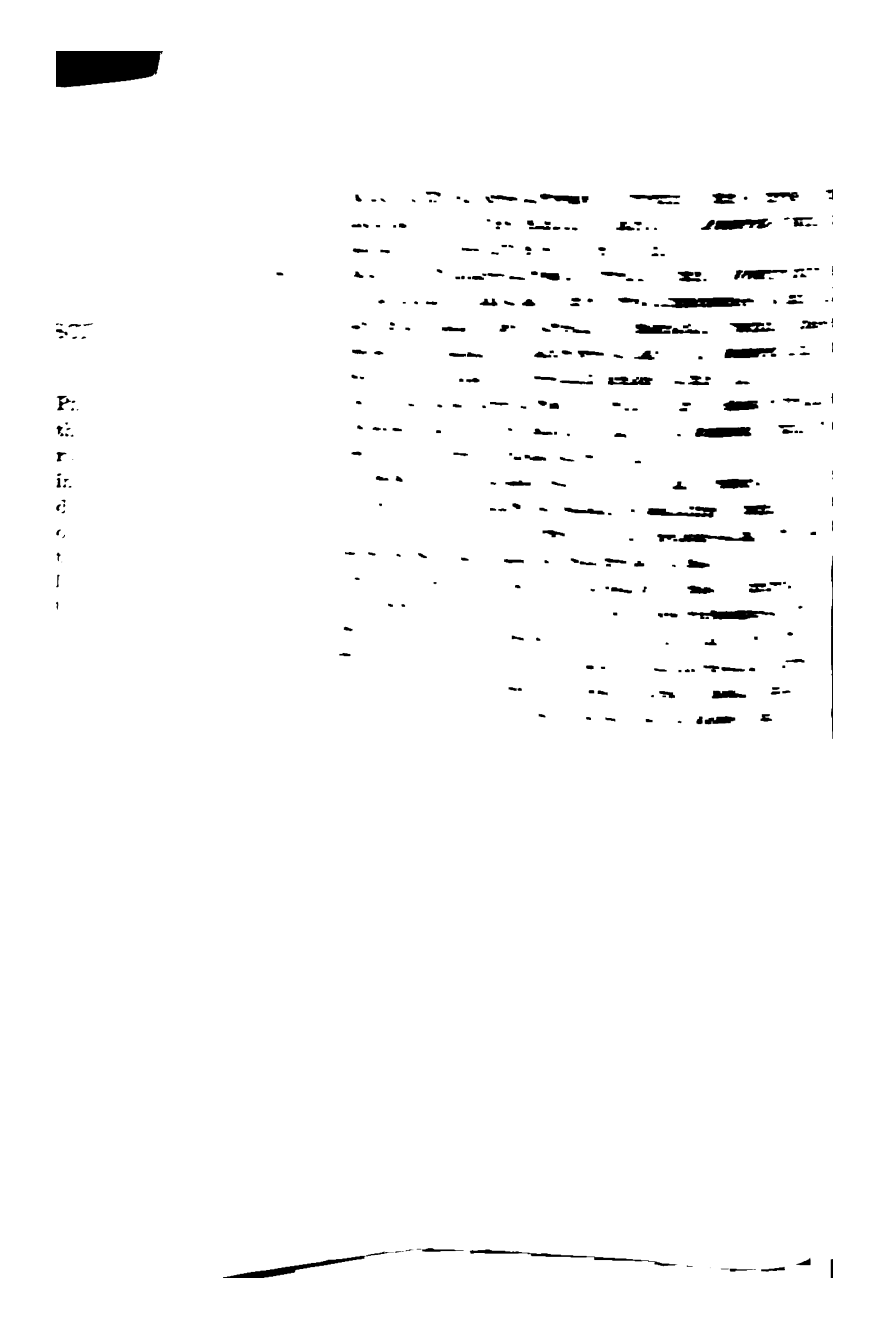
6. L Rectus—*Arises* from the sternum, and the two last true ribs, and is *Inserted* into the os pubis. *Use*—Raises the body when we lie on the back, and sustains it when bent backwards. It has three or four nervous or tendinous intersections or bands, which divide it and make it appear like several muscles: the third of these bands is not, in every body, exactly in the same place, it being sometimes even with the navel and sometimes higher; sometimes there is one of these bands below the navel.

7. O Sartorius—*Arises* from the upper and fore part of the spine of the ilium, and, descending obliquely over the thigh, is *Inserted* into the inner and upper part of the tibia. *Use*—Crosses the legs in the manner tailors are used to sit, and hence it has its name.

8. P Tensor Vaginæ Femoris—This, covered by it, stretches the membranosus, or fascialis, which *Arises* from the upper and fore part of the spine of the ilium; its fleshy part terminates at the great trochanter, where its membranous part begins, and, spreading itself over the muscles of the thigh, passes to its *Insertion* on the upper part of the tibia. *Use*—Draws the legs and thigh outwards.

9. Q Gracilis—*Arises* from the os pubis, near its articulation, and is *Inserted* into the upper and inner part of the tibia. *Use*—Helps to bend the leg, and assists in bringing it and the thigh inwards.

10. T Triceps—is named from having three heads: the first and second *Arise* from near the articulation of the os pubis, and the third from the tubercle of the ischium; they are *Inserted* all along the spine of the femur. *Use*—Pulls the thigh inwards.



11. V VASTUS EXTERNUS—*Arises* from the great trochanter and external part of the femur, and is *Inserted* with the following muscles. *Use*—Extends the leg.

12. W RECTUS FEMORIS—*Arises* from the lower part of the spine of the ilium; this, and the two muscles V and X just above the knee, make one strong tendon, which passes over the patella, to which it adheres, and is *Inserted* into the upper part of the tibia. *Use*—Extends the leg.

13. X VASTUS INTERNUS—*Arises* from the lesser trochanter and internal part of the femur, and is *Inserted* with the rectus femoris. *Use*—Extends the leg.

When a figure stands upright, and rests on one leg, there appear above the knee certain swellings, which are made by the tendon of the three last muscles and the skin, and which disappear when the knee is bent.

14. Y GASTROCNEMIUS—Has two distinct fleshy originations from the hindermost part of the two protuberances of the thigh-bone; in their descent they are dilated into two fleshy bellies, the innermost of which is thickest and largest, and, joining together, make a broad strong tendon, which unites with the tendon of the soleus, and is *Inserted* with it. *Use*—Extends the foot.

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DESCRIPTION OF THE MUSCLES OF THE BACK FIGURE.

15. B TRAPEZIUS—*Arises* from the hinder part of the head, from the spines of the vertebræ of the neck, and the eight upper ones of the back, and is *Inserted* into the spine and acromion of the scapula and the clavicle. *Use*—To move the clavicle, scapula, head, and neck. This muscle, passing over the scapula, contributes very much to a certain roundness we see in that part.

16. *a* INFRA SPINATUS—*Arises* from the cavity below the spine of the scapula, and, filling that cavity, is *Inserted* into the humerus, a little below its head. *Use*—Draws the arm downwards and backwards.

17. *b* TERES MINOR—*Arises* from the inferior costa of the scapula adhering to the capsular ligament, and is *Inserted* into the outside of the external tubercle of the humerus, below the infra spinatus. *Use*—To roll the humerus outwards, and to draw it backwards.

18. *c* TERES MAJOR—*Arises* from the lower angle of the scapula, and is *Inserted* into the humerus, with the latissimus dorsi. *Use*—Helps to draw the arm downwards and backwards.

19. *f* GEMELLUS, or TRICEPS BRACHIALIS, is composed of the brachæus externus, which *Arises* about the middle and hinder part of the humerus; the musculus longus, which *Arise* from the lower side of the scapula; and the musculus brevis which *Arises* from the hinder part of the humerus. These three make one tendon, which covers the elbow, and is *Inserted* into the hinder part of the olecranon. *Use*—To extend the fore-arm.

20. C LATISSIMUS DORSI—*Arises* from the hinder part of the spine of the ilium, from the upper spine of the os sacrum, from the

spines of all the vertebræ of the loins, and from the seven lower ones of the back : it passes by the lower angle of the scapula, to which some of its fibres are fixed, and, joining with the teres major, is *Inserted* with it into the humerus, three fingers' breadth below its head. *Use*—Helps to draw the arm downwards, and obliquely backwards. This muscle, at its origin, is so thin, that it does not hinder you seeing the action of the muscles that are underneath it; but towards its *Insertion* it becomes very thick and fleshy.

21. E Sacro Lumbalis—*Arises* from the upper part of the os sacrum, and back part of the spine of the ilium, and is *Inserted* into the back part of the ribs, rear their roof.

22. F Longissimus Dorsi—*Arises* from the same origin as the last muscles, and is *Inserted* partly into the processes of the vertebræ of the back, and partly into the ribs.

These last two muscles keep the body erect, bend it backwards, and sustain it when bent forwards; and when they act only on one side, they draw the body sideways. Although these two last, and the splenius, are entirely covered by the trapezius and latissimus dorsi, their action and shape appear very plainly.

23. G Glutæus Medius—*Arises* from the spine and dorsum of the ilium, and is *Inserted* into the back part of the trochanter major. *Use*—To pull the thigh outwards, a little backwards, and rotate it inwards.

24. H Glutæus Maximus—*Arises* from the external surface of the ilium, from the os coccygis and os sacrum, and is *Inserted* into the thigh-bone a hand's breadth below the great trochanter. *Use*—To extend and rotate the thigh inwards.

25. I Semitendinosus—*Arises* from the protuberance of the ischium, and is *Inserted* into the inner part of the tibia, below its articulation with the fibula. *Use*—Helps to bend the leg.

26. K SEMIMEMBRANOSUS—*Arises* from the protuberance of the ischium, and is *Inserted* into the upper and back part of the tibia. *Use*—Helps to bend the leg. N.B.—These last two muscles form the inner hamstrings.

27. L BICEPS FEMORIS—*Arises* by two heads, one of which arises from the tuberosity of the ischium, the other from the linea aspera of the thigh-bone: they both join together, and are *Inserted*, by one tendon, into the upper part of the fibula. *Use*—Helps to bend the leg, and is likewise employed in turning the leg and foot outwards when we sit down. N.B.—This muscle forms the outer hamstring.

PLATE VIII.—MUSCLES OF THE SIDE FIGURE.

PLATE VIII.

MUSCLES OF THE SIDE FIGURE.

A Deltoides.
B Biceps brachii.
C Brachialis internus.
D Supinator radii longus.
E Triceps.
F Trapezius, seu Cucullaris.
G Latissimus dorsi.
H Serratus major anticus.
I Obliquus descendens extranus.
K Glutæus maximus.
L Glutæus medius.
M Rectus femoris.
N Vastus internus.
O Vastus externus.
P Tendons of the semimembranosus and semitendinosus muscles, forming the inner hamstring.
Q Tendon of the biceps femoris, forming the outer hamstring.
S Gastrocnemius externus
T Soleus.
U Peroneus tertius.
V Extensor longus digitorum pedis.
W Tibialis anticus.

DESCRIPTION OF THE REMAINING MUSCLES, AS SHOWN ON THE SIDE FIGURE.

28. C Brachialis Internus—(This is partly covered by the biceps) —*Arises* from the middle and internal part of the humerus, on each side of the deltoides, and is *Inserted* into the upper and fore part of the ulna. *Use*—To bend the fore-arm.

29. H Serratus Major Anticus—*Arises* from the six lower true ribs, and from the first and sometimes the second of the false ones, by so many distinct portions, resembling the teeth of a saw, and is *Inserted* into the base of the scapula. *Use*—Moves the scapula forwards; and, when the scapula is forcibly raised, to draw the ribs upwards.

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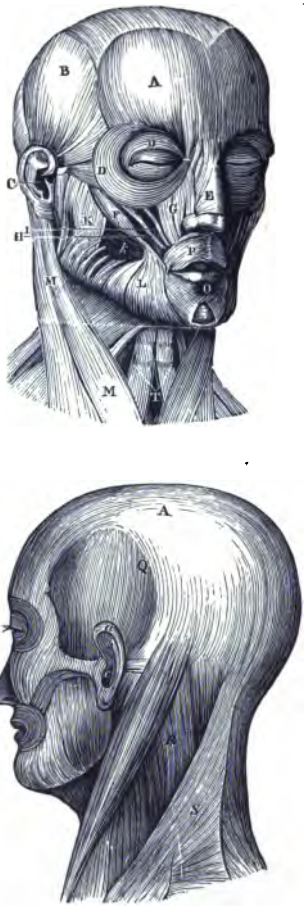

PLATE IX.—MUSCLES OF THE HEAD AND NECK.

PLATE IX.

MUSCLES OF THE HEAD AND NECK.

A Occipito-frontalis.
B Levator auris, or Attollens aurem.
C Concha.
D Orbicularis palpebrarum.
E Compressor naris.
F Zygomaticus major.
G Levator labii superioris alæque nasi.
H Zygomaticus minor.
I Levator anguli oris.
K Masseter.
k Buccinator.
L Depressor anguli oris.
M Sterno-cleido Mastoideus.
O Depressor labii inferioris.
P Orbicularis oris
Q Temporalis.
R Splenius.
S Trapezius, seu Cucullaris.
T Sterno-hyoideus.
a Helix.
b Anti-helix.
c Concha.

DESCRIPTION OF THE MUSCLES OF THE HEAD AND NECK.

30. A Occipito-Frontalis—*Arises* from the occipital tuberosity; the tendon is expanded over the superior part of the cranium, and is *Inserted* into the teguments of the forehead and eyebrows. *Use*—To move the skin, and raise the eyebrows.

31. B Attollens Aurem, or Levator Auris—*Arises* from the tendon of the occipitis, and is *Inserted* into the upper part of the ear, which is connected with the head. The action of this muscle is scarcely perceivable.

32. D Orbicularis Palpebrarum—Surrounds the eyelids on the edge of the orbit, and is fixed to the transverse suture which crosses the nose from the corner of the eye. *Use*—Shuts the eyelids.

33. F Levator Anguli Oris—*Arises* from the hollow of the superior maxillary bone, and is *Inserted* into the corner of the mouth. *Use*—To raise the corner of the mouth.

34. G Levator Labii Superioris Alæque Nasi—*Arises* by two heads; one from the lower edge of the orbit, the other from the nasal process of the superior maxilla; and is *Inserted* into the upper lip, and the outer part of the wing of the nose. *Use*—To raise the upper lip, and dilate the nostrils.

35. H Zygomaticus Major and Minor—*Arise* from the os malæ, near the zygomatic suture; and are *Inserted* into the angle of the mouth and the orbicularis oris. *Use*—To raise the corners of the mouth and to draw it outwards.

36. K Masseter—*Arises* from the higher part of the upper jaw, and is *Inserted* into the lower part of the under jaw. *Use*—To raise the jaw, and draw it obliquely outwards.

37. L Depressor Anguli Oris—*Arises* from the under part of the lower jaw, at the side of the chin, and is *Inserted* into the angle of the mouth. *Use*—To depress the corner of the mouth.

38. M Mastoideus—*Arises*, by two distinct origins, from the sternum and part of the clavicle, and is *Inserted* into the mastoid process. *Use*—To turn the head to one side, and bend it forwards.

39. O Depressor Labii Inferioris—*Arises* from the inferior part of the lower jaw, next the chin; runs obliquely upwards; and is *Inserted* into half the edge of the under lip. *Use*—To depress the under lip.

40. P Orbicularis Oris—*Formed* by the insertion of the fibres of other muscles, and constitutes the principal part of the lips; it is *Inserted* into its fellow, at the angles of the mouth. *Use*—To shut the mouth.

41. R Splenius, or Splenii—*Arises* from the three lower vertebræ of the neck, and the five upper ones of the back, and is *Inserted* above the mastoid process. *Use*—To move the head backwards and sideways.

42. T Sterno-hyoideus—*Arises* from the sternum, the clavicle, and the cartilage of the first rib, and is *Inserted* into the base of the os hyoides (a prominence in the fore-part of the neck, situated behind and nearly upon a level with the base of the lower jaw). *Use*—To depress the os hyoides.

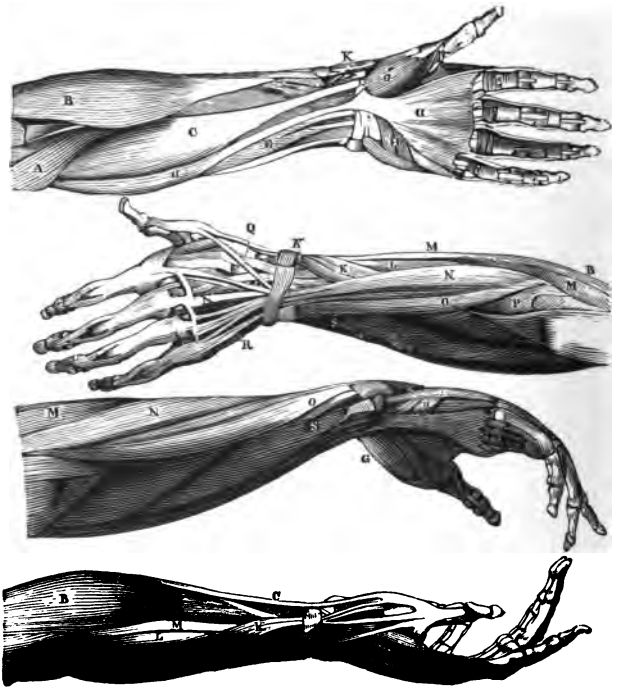

PLATE X.—MUSCLES OF THE FORE-ARM AND HAND.

PLATE X.

MUSCLES OF THE ARM.

A Pronator teres.
B Supinator radii longus.
C Flexor carpi radialis.
D Palmaris longus.
E Perforatus, and Perforans.
G Abductor pollicis manus.
H Palmaris brevis.
K Extensor pollicis.
K Extensor primi internodii.
L Extensor carpi radialis brevis.
M Extensor carpi radialis longus.
N Extensor digitorum.
O Extensor carpi ulnaris.
P Anconeus.
Q Extensor secundi internodii.
R Extensor minimi digiti.
S Flexor carpi ulnaris.

DESCRIPTION OF THE MUSCLES OF THE FORE-ARM AND HAND.

43. A PRONATOR TERES—*Arises* from the inner protuberance of the humerus, where those bending the wrist and fingers arise, and descends obliquely to its *Insertion*, a little above the middle of the radius. *Use*—To roll the radius together, with the hand inwards.

44. B SUPINATOR RADII LONGUS—*Arises* from the ridge of the humerus, above the outer protuberance, and is *Inserted* into the lower part of the radius. *Use*—Rolls the radius outwards, and, consequently, the palm of the hand upwards.

45. C FLEXOR CARPI RADIALIS—*Arises* from the inner protuberance of the humerus, and upper and fore part of the ulna, and is *Inserted* into the first bone of the metacarpus, that sustains the forefinger. *Use*—This, and the flexor carpi ulnaris, bend the wrist and hand.

46. D PALMARIS—*Arises* from the inner protuberance of the humerus, and, passing by a slender tendon to the palm of the hand, expands itself, and is *Inserted* into the bones of the metacarpus, and into the first bones of the fingers. *Use*—. Helps the hand to grasp anything closely.

47. E PERFORATUS, and PERFORANS, is the mass of flesh that appears under the flexor carpi radialis and palmaris. The perforatus *Arises* from the inner protuberance of the humerus, and from the radius and coronoid process of the ulna, and is divided into four tendons, which are *Inserted* into the second bones of the fore-finger. Just above their insertion, they are perforated or split, to give a passage to the tendons of the perforans, which *Arises* from the upper part of the ulna, and is likewise divided into four tendons, which pass through the perforations just mentioned, and are inserted into the third bones of the fore-fingers. *Use*—To bend the fingers.

N.B.—The muscles of the fore-arm are never so strongly marked as when the hand is shut, or grasps something with all its strength, because then the internal muscles acting, the external ones are swelled more than ordinarly.

48. K Extensor Pollicis—*Arises* from the hinder part of the middle of the radius and ulna, and, passing obliquely over the tendon of extensor carpi radialis, is *Inserted*, by two or three tendons, into the bones of the thumb. *Use*—Extends the thumb.

49. L Extensor Carpi Radialis Brevis—*Arises* from the outer protuberance of the humerus; *Inserted* into the root of the metacarpal bone of the little finger.

50. M Extensor Carpi Radialis Longus—*Arises* from the outer protuberance of the humerus, and is *Inserted* into the bones of the metacarpus that sustain the fore and middle finger. *Use*—The above two extend the wrist and hand.

51. N Extensor Digitorum—*Arises* from the outer protuberance of the humerus, and from the outer part of the radius and ulna at the wrist; it is divided into three tendons, which are *Inserted* into the bones of the first three fingers. *Use*—Extends the fingers.

52. O Extensor Carpi Ulnaris—*Arises* from the outer protuberance of the humerus and ulna; *Inserted* into the root of the metacarpal bone of the little finger. *Use*—To extend the wrist and hand.

53. P Anconeus—*Arises* from the back part of the outer protuberance of the humerus, and is *Inserted* into the ulna, four fingers' breadth below its head. *Use*—Helps to extend the arm.

54. S Flexor Carpi Ulnaris—*Arises* from the inner protuberance of the humerus and ulna, and is *Inserted* into the little bone of the wrist. *Use*—This and the flexor carpi radialis bend the wrist and hand.

PLATE XI.—MUSCLES OF THE LEG AND FOOT.

PLATE XI.

MUSCLES OF THE LEG AND FOOT.

A Tibialis anticus.
B Extensor longus digitorum pedis
C Peroneus tertius.
D Peroneus brevis.
E Peroneus longus.
F Soleus.
G Tendo Achillis.
H Extensor brevis digitorum pedis.
I Plantaris.
K Flexor longus digitorum pedis.
L Flexor longus pollicis pedis.
M Tibialis posticus.

DESCRIPTION OF THE MUSCLES OF THE LEG AND FOOT.

55. A TIBIALIS ANTICUS—*Arises* from the upper and outer part of the tibia; *Inserted* into the inner os cuneiforme, and the base of the metatarsal bone of the great toe. *Use*—To bend the foot.

56. B EXTENSOR LONGUS DIGITORUM PEDIS—*Arises* from the upper part of the tibia; *Inserted*, by four tendons, into the bones of the four small toes. *Use*—Extends the toes.

57. C PERONEUS TERTIUS—A portion of the last muscle, which *Arises* from the middle of the fibula; *Inserted*, by a tendon, into the root of the metatarsal bone of the little toe. *Use*—To assist in bending the foot.

58. D PERONEUS BREVIS—*Arises* from above the middle of the outer part of the fibula, and, passing under the groove of the outer ankle, is *Inserted* into the root and outer part of the metatarsal bone of the little toe.

59. E PERONEUS LONGUS—*Arises* from the upper and outer part of the peronea or fibula, and, passing through the channel of the outer ankle, turns under the foot, and is *Inserted* into the root of the metatarsal bone of the great toe. *Use*—This, with the former, moves the foot outwards, and extends it a little.

60. F SOLEUS—*Arises* from the upper and back part of the tibia and fibula, and increases to a large fleshy belly, which lies under the gastrocnemius; and, terminating in a very strong tendon, which by some is called the tendon of Achilles, is *Inserted* into the hinder part of the os calcis. *Use*—Extends the foot.

The action of this with the gastrocnemius and the flex. long. digitorum is very necessary in running, leaping, jumping, walking, and standing on tiptoe; and those who walk much, or carry heavy burdens, have these muscles larger than others.

61. K FLEXOR LONGUS DIGITORUM—*Arises* from the upper and inner part of the tibia, and is *Inserted* into the last bones of all the toes, except the great toe. *Use*—To bend the toes.

62. L FLEXOR LONGUS POLLICIS—*Arises* from the back part of the fibula, below its head; *Inserted* into the last joint of the great toe. *Use*—To bend the great toe.

63. M TIBIALIS POSTICUS—*Arises* from the back and upper part of the tibia and fibula, and is *Inserted* into the os scaphoides, and partly into the under surface of the tarsal bones. *Use*—To move the foot inwards, and to turn the toes inwards.